

DEPARTMENT OF COMMERCE

Bureau of Standards

(Revised July 1, 1926)

FEES FOR MAGNETIC TESTING

(The schedules of fees given in this circular supersede all previous schedules).

SCOPE OF MAGNETIC TESTING

The regular routine magnetic testing of the Bureau of Standards consists of the determination of normal induction and hysteresis data and the measurement of core loss. Normal induction and hysteresis tests are ordinarily made at values of magnetizing force not exceeding 300 gilberts per cm and core loss tests are made at a maximum induction of 10000 gausses and a frequency of 60 cycles. Tests to be made beyond the range indicated above, or under different conditions, are special, and should be arranged for before submission of the material. Other special tests include the calibration of specially prepared standard specimens for use in checking the accuracy of magnetic testing apparatus, the determination of the magnetic susceptibility of feebly magnetic substances and other tests involving the determination of magnetic quantities.

NORMAL INDUCTION AND HYSTERESIS

Test Specimens

Test specimens must be at least 25 cm (10 inches) long and may be of any uniform cross-section having dimensions not exceeding 1.8 cm by 4 cm ($3/4$ inch by $1\ 5/8$ inch) or, round, having a diameter of 1.27 cm ($1/2$ inch). The rectangular section is preferred. In the case of sheet material, it is recommended that the sampling procedure specified by the American Society for Testing Materials be followed.

Samples of magnet steel must be submitted in the hardened condition.

Unless specifically requested, test specimens will not be returned.

Test Data

The points at which normal induction and hysteresis data should be taken depend upon the nature of the material and the use for which it is intended and should be specified in the request for test.

Schedule 141. Normal Induction and Hysteresis

(a) First value of normal induction	\$5.00
(b) Each additional value of normal induction	.25
(c) Each point on the hysteresis loop	.75

(The tip of the hysteresis loop must be specified and is taken as a value of normal induction).

CORE LOSS

Core loss tests are made in accordance with the specifications of the American Society for Testing Materials. The test consists of a determination of total loss at a maximum induction of 10000 gaussess and a frequency of 60 cycles per second.

Test Specimens

For this test 10 kilograms (22 pounds) of material, cut with a sharp shear into strips 50 cm (19 11/16 inches) in length and 3 cm (1 3/16 inches) in width, are required. Half of the strips should be cut parallel and half at right angles to the direction of rolling. The strips should be cut to size by the person submitting the material for test. It is recommended that the sampling procedure specified by the American Society for Testing Materials be followed.

Unless specifically requested, test specimens will not be returned.

Schedule 142. Core Loss

(a) Determination of core loss at 10000 gaussess, 60 cycles	\$5.00
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